REMARKS/ARGUMENTS

The amendments to the claims and the newly added claims are supported by the specification and the original claims:

- Claims 6 & 22: paragraph bridging pages 3 & 4, & Table 1, alloy # 8; &
- Claim 29: page 7, lines 3-4;
- Claims 30-31: Table 3, *e.g.* fin materials #s 4 and 1.

No new matter has been added.

Applicants' representative thanks Examiner Walck for the helpful and courteous discussion held on 16 April 2010. The issues discussed will be expanded upon in the comments that follow.

Related art rejection

1. The rejection of claims 6 and 10-27 under 35 USC 102(b) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over JP 2002-161323 ("*Shoji*") in view of the evidentiary references the article titled "Aluminum Alloys" by Lyle et al and the article titled "Aluminum and Aluminum Alloys" by Sanders is respectfully traversed.

As the Office will note and in accordance with our discussion, each of independent claims 6 and 22 has been amended, in regard to the range of iron, as follows: "0.15-0.55 ~~0.7~~ wt% of Fe". Applicants have also broadened the range of Mn in claim 6.

The properties of the presently claimed alloy (for fin materials) would not be inherent to or expected from the fin materials of the *Shoji* alloys. Claims 12, 29 and 22 are certainly free from the current anticipation rejection in view of *Shoji*. The presence of manganese ("Mn") in particular amounts (see, *e.g.*, claims 6, 12, 14, 22 and 29) is implicated for, *e.g.*,

increasing the strength of the alloy material after brazing of the claimed alloys and fin materials:

> Mn coexists with Fe and Si and is precipitated at high densities in the form of Al--(Fe.Mn)--Si compounds at the submicron level during brazing, thus increasing the strength of the alloy material after brazing. Additionally, since submicron-level Al--(Fe.Mn)--Si precipitates have a strong recrystallization inhibiting function, the recrystallized grains become coarse at 500 μm or greater, thus improving sag resistance and erosion resistance. If the Mn content is less than 1.5 wt %, the effects are not adequate, and if greater than 3.0 wt %, coarse Al--(Fe.Mn)--Si crystals are generating during casting of the alloy, thus making production of plate materials difficult, while the Mn colid solution rate increases so as to reduce the thermal conductivity. Therefore, the range of contents is preferably 1.5-3.0 wt %. The Mn content is more preferably 1.8-3.0 wt %.

See paragraph bridging pages 6 and 7 of the specification as filed, emphasis added.

Please note, the presently claimed alloy(s) (fin materials) can accommodate Mn in amounts of "2.2-3.0 wt%" (see, *e.g.*, claims 12 and 22); thus, here, there is no overlap between the ranges of Mn as disclosed in *Shoji* and as presently claimed.

Shoji discloses the following in regard to the amount of Mn:

> The desirable content range of Mn is 1.0%-2.0%, the effect is small at less than 1.0 %, if contained exceeding 2.0 %, crystallized material big and rough at the time of casting will generate, manufacture of a plate will become difficult, further, the amount of dissolution of Mn increases and thermal conductivity falls.

See [0011] of *Shoji*. *Shoji* also includes a comparative example fin material, No. 16, which includes alloy 14. Alloy 14 includes 2.3 wt% of Mn (see Table 3 of *Shoji*, found on page 8 of the machine translation). In Table 4, no data are reported for this fin material. *Shoji* concludes:

> Since fin material No. 16 had too much content of Mn, hot-rolling became difficult and it was not able to manufacture a healthy material.

See [0040] of *Shoji*.

MPEP § 2143.01(V) states that: "If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)." In view of the above, it would not have been obvious to modify the *Shoji* alloys to have, *e.g.*, Mn in an amount of greater than 2.0 wt%, especially since *Shoji* gives an explicit example where an alloy having greater than 2.0 wt% of Mn could not be successfully used to form a fin material. Thus, such a modification has been shown to render the *Shoji* invention useless.

As noted above, *Shoji* discloses that the "desirable content range of Mn is 1.0%-2.0%", where, "if contained exceeding 2.0 %, crystallized material big and rough at the time of casting will generate..." Thus, it appears that *Shoji* implicates Mn and the amount thereof in crystal size of the alloys. On the other hand, the present specification states: "...the recrystallized grains become coarse at 500 μm or greater, thus improving sag resistance and erosion resistance..." See quote above and, *e.g.*, claims 6, 22 and 30-31 for recrystallized grain dimensions. It would not have been obvious to make alloys having the recrystallized grain dimensions as presently claimed, and thus the improved sag and erosions resistances would not have been expected from fin materials made of the *Shoji* alloys.

Withdrawal of the rejection(s) is therefore requested.

Conclusion

Applicants respectfully submit that the above-identified application is in condition for allowance. Notification thereof is requested.

Respectfully submitted,

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